

AMENDMENTS TO THE CLAIMS

1. **(Withdrawn)** A polynucleotide molecule of 601 nucleotides isolated from *Neospora caninum* comprising SEQ ID NO: 9, corresponding to NcSAG4 gene, that comprises an ORF of 522 nucleotides encoding the antigenic protein NcSAG4 of 173 amino acids of SEQ ID NO: 10.

2. **(Withdrawn)** The polynucleotide molecule encompassing the sequence of ORF of the NcSAG4 gene according to claim 1, included in an expression vector by insertion of said polynucleotide amplified by PCR using oligonucleotides FNcSAG4 and ReNcSAG4 of SEQ ID NO: 11 and SEQ ID NO: 12, respectively.

3. **(Withdrawn)** The polynucleotide molecule comprising the sequence including from nucleotide 83 to 444 of the ORF of gene NcSAG4 described in claim 1, included in an expression vector by inserting of said polynucleotide amplified by PCR using oligonucleotides F85NcSAG4 and Re444NcSAG4 of SEQ ID NO: 13 and SEQ ID NO: 14, respectively.

4. **(Canceled)**

5. **(Withdrawn)** A method for detecting of *N. caninum* comprising performing PCR or RT-PCR of any fragment of the polynucleotide of Claim 1 using oligonucleotides: SAG4-2, SAG4-3, SAG4-4, 1R5SAG4, 2R5SAG4, 1F3SAG4 and 2F3SAG4, FNcSAG4, ReNcSAG4, F85NcSAG4, and Re444NcSAG4 of SEQ ID NO: 2, 3, 4, 5, 6, 7, 8, 11, 12, 13 and 14, respectively.

6. **(Withdrawn)** A recombinant vector comprising the nucleotide sequence of SEQ ID NO: 9.

7. **(Withdrawn)** Host eukaryote cells transfected with recombinant vector of claim 6.

8. **(Withdrawn)** Host prokaryote cells transformed with the recombinant vector of claim 6.

9. **(Currently amended)** An isolated A polypeptide selected from (a) antigenic protein NcSAG4 of *N. caninum*, comprising SEQ ID NO: 10; (b) chemically or enzymatically modified sequences of derived from sequences homologous to SEQ ID NO: 10 conserving their antigenic characteristics; (c) NcSAG4 polypeptides of derived from SEQ ID NO: 10 conserving

their antigenic characteristics; and (d) a recombinant protein including protein or polypeptide of (a), (b) or (c).

10. **(Withdrawn)** A method for expressing heterologous genes in cells of *N. caninum* comprising transfecting said cells with gene constructions prepared with a promoter of gene NcSAG4.

11. **(Withdrawn)** A method for diagnosing chronic infection by *N. caninum* from tissues or fluids from infected animals comprising performing PCR or RT-PCR, or hybridization *in situ* with DNA probes for the polynucleotide sequence of Claim 1.

12. **(Withdrawn)** A method for serological diagnosis of chronic infection by *N. caninum* by enzyme immunoassay (ELISA), radioimmunoassay (RIA), immunoblot or any other method based on the antigenicity of the polypeptides of Claim 9.

13. **(Withdrawn)** A method for the diagnosis of chronic infection by *N. caninum* comprising performing competition ELISA using monoclonal antibodies or specific polyclonal antisera against polypeptides of Claim 9.

14. **(Withdrawn)** A method for the diagnosis of chronic infection by *N. caninum* in tissues from animals comprising performing immunohistochemistry, immunofluorescence or any other method based on the detection of *N. caninum* by specific polyclonal antisera against polypeptides of Claim 9.

15. **(Currently amended)** An immunogenic composition comprising an isolated a: ~~(a) a polypeptide of claim 9; or (b) a polynucleotide molecule according to claim 1 or; (c) a recombinant vector of claim 6 or; (d) host cells of claim 7; or (e) host cells of claim 8, formulated as vaccine against neosporosis.~~

16. **(Previously presented)** The immunogenic composition according to claim 15, further comprising an adjuvant or a cytokine.

17. **(Currently amended)** A method of preparation of an immunogenic composition of Claim 15 or 16 comprising combining ~~(a) an isolated~~ polypeptide of claim 9; ~~or (b) a polynucleotide molecule according to claim 1 or; (c) a recombinant vector of claim 6 or; (d) host cells of claim 7; or (e) host cells of claim 8~~ with ~~a~~ an adjuvant or a cytokine.

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18. **(Currently amended)** A ~~vaccination~~ kit for eliciting an immune response in mammals against neosporosis encompassing a container including an immunogenic composition of claim 15.

19. **(Withdrawn)** The polynucleotide of Claim 2, wherein the expression vector is a plasmid pcDNA3.1-His-C.

20. **(Withdrawn)** The polynucleotide of Claim 3, wherein the expression vector is a plasmid pRSET-C.

21. **(New)** An isolated polypeptide comprising SEQ ID NO: 10 or an immunogenic portion thereof.

22. **(New)** The polypeptide of Claim 21, comprising amino acids 29-148 of SEQ ID NO: 10.